IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF OKLAHOMA

BEVERLY MICHELLE MOORE	)	
	)	
Petitioner,	)	
	)	
v.	)	Case No. CIV-09-985-C
	)	
WARDEN MILLICENT NEWTON-EMBRY,	)	
	)	
	)	
Respondent.	)	

PETITIONER'S REPLY ON ISSUE OF TIMELINESS

Respectfully Submitted,

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INTRODUCTION

Because Petitioner is actually innocent of the crime for which she was convicted, applying the one-year time bar would constitute a manifest miscarriage of justice.[1] Ms. Moore was convicted of first degree murder of a child in 2005 based on the outdated and unproven theory that A.S.'s injuries could *only* be explained by intentional shaking or shaking plus impact and that, because Ms. Moore was the only person with A.S. at the time of his collapse, she was the perpetrator. Since the time of Ms. Moore's trial, new developments in the medical field have established that a wide array of natural and accidental causes can result in the symptoms demonstrated by A.S. and that the presence of those symptoms is not exclusive to intentional injury. Moreover, the new scientific developments have debunked the previously asserted theory that any collapse would have followed immediately or within minutes of a head injury.

Based on independent and thorough reviews of the medical records and child's history by renowned experts, and with the understanding of the many ways in which medical conditions and accidental trauma can "mimic" the symptoms previously associated with Shaken Baby Syndrome (SBS), Petitioner proffers medical testimony in support of her actual innocence claim. This evidence establishes that A.S.'s death was caused by a combination of accidental and/or natural causes – including a fall that occurred approximately a week before his death and an undiagnosed seizure disorder, and other medical conditions that in

[1] Because the only issue before the Court is whether Ms. Moore's claim is timely, this brief addresses only that claim.

retrospect had greater significance than was recognized by A.S.'s caretakers or medical care providers. Irrespective of the precipitating cause of A.S.'s fatal brain injury, the presence of hemosiderin (iron) in the contusions to the scalp on the back of A.S.'s head and in the subdural hemorrhages – the findings relied on to convict Ms. Moore – conclusively establishes that these occurred *days* if not much longer before A.S.'s collapse (when he was in the care of others), and *not* in the approximate half hour before his hospital admission. Had the jury at Ms. Moore's trial been presented with the new medical evidence, no reasonable juror would have found Ms. Moore guilty, beyond a reasonable doubt, of murder in the first degree.

APPLICABLE LEGAL AUTHORITY

The Anti-Terrorism and Effective Death Penalty Act establishes a one-year limitation period for challenging a state-court conviction. See 28 U.S.C. § 2244(d). However, a claim of actual innocence may toll the one-year AEDPA statute of limitations. Laurson v. Leyba, 507 F.3d 1230, 1232 (10th Cir. 2007).

To support her claim of actual innocence, Petitioner must present "new reliable evidence – whether it be exculpatory scientific evidence, trustworthy eyewitness accounts, or critical physical evidence – that was not presented at trial." Schlup v. Delo, 513 U.S. 298, 324 (1995). She must show that "it is more likely than not that no reasonable juror would have convicted [her] in light of the new evidence." Schlup, 513 U.S. at 327. The Court is not required to be absolutely certain as to Petitioner's guilt or innocence, however. House

v. Bell, 547 U.S. 518, 538 (2006). Also, unlike other cases in which equitable tolling requires a petitioner to show that she diligently pursued habeas relief, no such showing is required here. Lopez v. Trani, — F.3d. —, Case No. 10-1088 (10th Cir. Dec. 6, 2010).

The evidence required to support a claim of actual innocence need only be newly-*presented,* and not necessarily newly-*discovered*. See Schlup, 513 U.S. at 330 (referring to the evidence required for the actual innocence claims as "newly presented"); see also Calderon v. Thompson, 523 U.S. 538, 559 (1998) (referring to the actual innocence exception as requiring reliance on "evidence not *presented* at trial") (emphasis added); Cummings v. Sirmons, 506 F.3d 1211, 1223-24 (10th Cir. 2007) (noting that Supreme Court precedent requires an actual innocence claim be supported with "new reliable" evidence "not presented at trial.") The newly presented evidence could include that which was available but excluded at trial, or evidence that was then unavailable. Schlup, 513 U.S. at 327-28. As argued in Petitioner's Motion to Expand the Record, all of the additional evidence proffered by Petitioner may be considered by the Court in an actual innocence gateway claim.[2]

Petitioner maintains that, after considering the new material in connection with the evidence presented at trial, the Court will conclude that no reasonable jury would have convicted Petitioner of murdering A.S. The new evidence is more than sufficient to meet the showing of actual innocence required to allow the Court to address the constitutional claims.

[2] As further argued in Petitioner's Motion to Expand the Record, even if the more stringent "newly discovered" evidence standard were applicable, the overwhelming majority of the evidence – including the expert opinions and testimony about the child's behaviors and prior injuries – would still be admissible. (See Pet.'s Mot. to Expand the Record, Dkt. No. 107.)

FACTUAL BACKGROUND

At 2:58 p.m. on January 13, 2004, Beverly Moore frantically called 911, telling the emergency workers that her boyfriend's son, A.S., had fallen, had a bump on the back of his head, and was only "sort of" breathing. 911 Tr. 2-3.[3] Her boyfriend, Todd Snyder, had left their home only a few minutes prior, sometime around 2:45 or shortly thereafter. Snyder Police Int. Tr. 6; Trial Tr. Vol II 67. A.S. had been upset that his father left so Ms. Moore held him, attempting to comfort him. Trial Tr. Vol. III 135. A.S. was still fussy when Ms. Moore set him down and told him to go play with his toys, hoping that would distract him. Id. Instead, A.S. walked into the kitchen, around a corner. About the time Ms. Moore called to him to come out of the kitchen, she heard a noise. Id. She went into the kitchen and found A.S. lying on the floor with his tongue clenched between his teeth. Id. She tried to arouse him but he was unresponsive. Id. She unclenched his tongue, and began rounds of CPR and mouth to mouth. Id. at 137-38. When that was unsuccessful, she carried him to the living room, grabbed the phone, and called 911. Id.

The fire department, and then EMSA, quickly responded. Within about fifteen minutes of the 911 call, A.S. was in the ambulance and speeding towards Integris Baptist Medical Center (IBMC). En route, A.S.'s heart stopped beating, resuming only after the administration of CPR and heart-stimulating drugs, just as the ambulance arrived at IBMC at 3:22 p.m. Trial Tr. Vol. I 115-117, 129-133.

[3] All exhibits referenced are those in Petitioner's Appendix of Exhibits, filed in two volumes as docket numbers 108 & 109.

At approximately 3:37 p.m.,[4] a CT scan was performed on A.S.'s brain, which showed diffuse loss of gray/white differentiation consistent with diffuse cerebral edema. Also noted on the CT scan was a "tiny posterior interhemispheric central hematoma". IBMC Med. Records: Radiology Rep. There was no evidence of skull fracture or external trauma. Although the treating physician believed he felt a bump on the back of A.S.'s head, he later concluded that this was a normal skull formation. Trial Tr. Vol. II 155, 203; IBMC Med. Records: History & Physical Rep.; Barnes P. Rep. ¶ 7. A.S. did not recover and was pronounced brain dead approximately 26 hours after hospital admission. IBMC Med. Records: Disch. Summ.

The medical providers immediately suspected child abuse. EMSA Rep.; Trial Tr. Vol. I 155, 162-63; Trial Tr. Vol. II 11, 25-26. Dr. Griggs, A.S.'s treating physician, began suspecting that A.S. was the victim of shaken baby syndrome while conducting his initial examination– based on the absence of external trauma, a history presented by the intake nurse (relating a story of unknown origin regarding A.S. rolling off a couch), and the presence of bilateral retinal bleeding. Trial Tr. Vol. II 153-155. Shortly after A.S.'s admission, the police were contacted. Id. at 187; 911 Tr. 3-5.

In response, Officer Keith Medley went to IBMC. He first interviewed the ER staff and then went and met with Ms. Moore, who again described hearing a "thud" from the kitchen and finding A.S. with his jaw clenched between his teeth. Trial Tr. Vol. II 53-55.

[4] The time stamp on the actual radiology scan reads 3:37. The report stating 3:56 most likely reflects the time of dictation. IBMC Med Rec.: CT Images.

The police officer didn't believe Ms. Moore and so, after further consultation with the medical staff, he contacted the homicide office. Id. at 57-59. Merely hours after Ms. Moore called 911 – and again after the homicide detectives met with the treating pediatrician at his insistence – Ms. Moore and Todd were transported to the police station for questioning: Todd as more of a witness, and Beverly as a suspect. Prel. Hrg. Tr. 4-10, 30; Trial Tr. Vol. III 34, 37.[5] Prior to beginning the interview with Ms. Moore, the police read Ms. Moore her Miranda rights. In response to whether Ms. Moore understood the rights, she answered, "I guess." Neither officer followed up to see why she gave an equivocal response. Similarly, when asked if she wanted to waive her rights and speak with the detectives, Ms. Moore did not answer, instead asking if she was under arrest. The detective's response – "Not yet." Moore Interr. Tr. 5-6.

During the interview of Mr. Snyder and the interrogation of Ms. Moore, the police repeatedly claimed that A.S.'s injuries were definitely caused by SBS, and that Ms. Moore was the perpetrator because the shaking would have caused *immediate* brain damage. Snyder

[5] The exact time of the interview is unclear, but appears that it is later than the 8:30-9:00 p.m. time estimated by Detective Dupy. At the preliminary hearing, Dr. Dupy testified that after receiving the call at 7:00 p.m., he went to the hospital and spoke to the treating physician and A.S.'s mother. The would presumably have taken at least an hour. The police then talked to Ms. Moore and Mr. Snyder and escorted them IBMC to the police station, approximately a 15 minute drive. Mr. Snyder was interviewed first. From the recording, the detectives did not leave his interview room until more than fifty minutes after the video recording was turned on, making it after 9:00 p.m. From Ms. Moore's interview, we know that her interview did not begin for at least another nine minutes after that. Based on the complete record, then, it appears that Ms. Moore's interview took place sometime well after 9:00 p.m. Prel. Hrg. Tr. 4-10, 30; Snyder Police Int. DVD.

Police Int. Tr. 16-19, 22-23; Moore Interr. Tr. 18-19, 24-27. Ms. Moore repeatedly denied any wrongdoing, but the police told her she was lying and that what she reported was a medical impossibility. Ms. Moore remarked that it appeared from the interrogation that she'd "be in jail no matter what [she] told" the detectives. Moore Interr. Tr. 28. The police responded that, "the truth is what . . . determines that." Id. Throughout the interrogation, the police suggested that Ms. Moore would be "better off" if she told the detectives "the truth" (that she shook A.S.). Id. at 25-27. The detectives also stressed that she should show her love to Todd and A.S. by "acknowledging what occurred." Id. at 26.

At some point during the interview, Ms. Moore learned from the detectives that Todd was still sitting in the interview room next door waiting for her to tell the "truth" instead of being transported back to the hospital to be with A.S. as previously arranged. B. Moore Decl.¶¶ 10-11. Having already learned that A.S. was likely going to die and to free Todd to return to A.S.'s side and end the nightmare of the interrogation, Ms. Moore succumbed to the police pressure to provide a version of events that included her having shaken A.S. Moore Interr. Tr. 28; B. Moore Decl. ¶ 11. In this version, she says that she sent A.S. to "the room" and when he didn't stop crying, she "shook him" about 3 or 4 times. Moore Interr. Tr. 30-31, 33. When the police asked how the knot got on A.S.'s head (the one later determined to be part of A.S.'s normal skeletal formation), Ms. Moore suggests that A.S. was laying on the floor when she shook him and "guess[es]" that his head hit the floor once or twice. Id. at 35; B. Moore Decl ¶ 7 & Ex. B. Throughout the interrogation, Ms. Moore

offers little, if any, additional details that would independently corroborate her story, instead simply responding to the cues given to her by the officers. She does not, however, ever admit to having lost her temper or having shaken A.S. hard. See Moore Interr. Tr. 34-37; B. Moore Decl. ¶ 7 & Ex. B.

Ms. Moore was arrested for A.S.'s murder. She was charged via Information with First Degree Murder by, "on or about the 13th day of January, 2004 . . . willfully or maliciously injur[ing] . . . or using unreasonable force upon a child under the age of eighteen, specifically" A.S., thereby causing his death. Crim. Info.

After Ms. Moore's arrest and A.S.'s presumed brain death, Dr. David Korber, an ophthalmologist, was called in to see if A.S.'s eye findings were consistent with SBS. Trial Tr. Vol. II 240, 245; IBMC Med. Records: Progress Note 1-14-04 12:00 p.m. Dr. Korber performed a visual examination and confirmed that A.S. suffered from bilateral retinal hemorrhaging, and that the bleeding had caused a retinal detachment in one eye. Trial Tr. Vol. II 241-244, 246-253. Dr. Korber concluded from his examination alone that the *only* cause of these injuries was trauma, specifically, shaking. Id. at 253-254, 258, 260-263. There is no indication in the medical notes or testimony that Dr. Korber considered any other possible explanation for his findings. IBMC Progress Note 1-14-04 12:00 p.m. After Dr. Korber conducted his examination but before A.S. was declared brain dead, a pediatric neurologist conducted an examination and found A.S. had swollen optic discs. IBMC Med. Records: Progress Note 1-14-04 17:50 p.m.; Gardner Rep.¶ 11.

Before removing A.S. from life support, family and close friends were called into a conference with A.S.'s primary physician. Roth Supp. Decl. ¶ 12. During this meeting, A.S.'s daycare provider, Janus Roth. specifically asked the doctor whether A.S.'s injuries could be attributed to his prior falls, his recent lethargy, or his possible seizure disorder, to which the doctor replied that they "just didn't know." Id.; E. Roth Decl. ¶ 7. A.S. was thereafter officially declared brain dead and taken off life support. Trial Tr. Vol. II 181-186.

At autopsy, forensic pathologist, Dr. Chai Choi, identified two deep layer contusions (bruises) on the inside of A.S.'s scalp with accompanying focal subgaleal hemorrhages and small subdural and subarachnoid hemorrhages, which produced about two teaspoons of blood. Autopsy Rep.: Path. Diagnosis; Mack P. Rep. ¶ 8. In her microscopic examination, Dr. Choi noted that the contusions on the back of A.S.'s head (between the scalp and the skull) were "scattered hemosiderin laden",[6] and concluded without further testing that they were "likely recent and acute hemorrhages." Autopsy Rep.: Path. Diagnosis. The microscopic examination also revealed "focal leukostasis in the hemorrhagic area of the arachnoid space" of A.S.'s brain. There is no indication that Dr. Choi performed any tests to identify the source of this highly abnormal finding. Id. Notably, before performing the autopsy, Dr. Choi had been told by the hospital that it was believed that A.S. suffered from SBS and that Ms. Moore had confessed. Trial Tr. Vol. III 68-71; Autopsy Rep. 1: Comments.

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[6] Hemosiderin is an iron-storage complex found in cells that indicate healing. Merriam-Webster's Collegiate Dictionary 11th ed., 580 (2004); Ophoven Decl. ¶¶ 5, 12 (referencing the presence of hemosiderin and "iron-positive cells" interchangeably); Jan. E. Leestma, Forensic Neuropathology 2d ed., 509 (CRC Press 2009).

Just as Dr. Grigg's certainty that A.S.'s injuries were caused by abuse drove the investigation, the medical "evidence" that A.S. suffered abuse was the focal point of the trial. Drs. Griggs, Choi, and Korber all testified that the retinal hemorrhaging was "highly suggestive of", "consistent with", or "ha[d] to be" the result of a violent shaking injury. Trial Tr. Vol. II 155, 261; Trial Tr. Vol. III 88-89,111. Dr. Choi also testified that the subdural hematoma was caused by tearing of the bridging veins that connect the brain to the sagittal sinus, which could only be caused by shaking. Trial Tr. Vol. III 81-85; see also Trial Tr. Vol. II 169-175 (similar explanation from Dr. Griggs). In part because of Beverly's admission during interrogation to A.S.'s head having hit the floor, as well as bruising on the inside of the scalp, Dr. Choi concluded that a combination of shaking and impact led to A.S.'s death. Trial Tr. Vol. III 75-81, 86, 97-98, 108; see also Trial Tr. Vol. II 175, 227.

The prosecution relied entirely on medical "evidence" to confirm that A.S. died from abuse and that Ms. Moore was the one to inflict the abuse. Drs. Grigg and Choi both testified that the interval between the time A.S. was shaken and the time of collapse would have been "immediate" or "within minutes" – at most, five. Trial Tr. Vol. II 178-180, 194-199; Trial Tr. Vol. III 99-100, 110. Dr. Korber initially disagreed, stating that it would be rare to see this extent of retinal hemorrhaging for an injury that occurred in such a short time frame, suggesting that the injuries were within a week old. Trial Tr. Vol. II 265-266. However, on redirect, he was quick to defer to Dr. Griggs' analysis on the time frame between injury and collapse. Id. at 272-273. As Ms. Moore was the only person with A.S. at the time of his

collapse or in the five minutes before calling 911, she *had* to be the person who inflicted the injury. Trial Tr. Vol. IV, 8-11.

Like the prosecution, the defense attorneys accepted the SBS diagnosis as medical fact, offering no alternative theory on the cause and timing of A.S.'s death. Trial Tr. Vol. I 57-58; Trial Tr. Vol. IV 35, 69-70. The defense therefore did not explore the possibility that A.S. died from accidental or natural causes, or that, even if intentional, that the injury was sustained *prior* to 2:45 p.m. on January 13, 2004, when A.S. had been in the care of others.

Ms. Moore was convicted of first degree murder of a child. This conviction rested solely on the SBS medical theory provided by the State's medical experts on timing and cause, as well as the claimed consistency between Ms. Moore's admissions during the police interrogation and the unchallenged medical findings. There was no evidence presented that Ms. Moore had ever previously abused A.S. or any other child, Trial Tr. Vol. 1 92, nor was there any physical evidence outside the controversial triad[7] – to confirm that Ms. Moore had shaken A.S. – no grip marks on his chest or arms, no injuries to his neck or spine. Trial Tr. Vol. III 102-103. The contusions on the back of A.S.'s head provided the only evidence of impact, and the defense failed to challenge the date of these injuries. Without any real challenge to the evidence, the conviction was hardly surprising.

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[7] The triad of symptoms traditionally attributed to SBS included subdural hemorrhage, retinal hemorrhage, and cerebral edema (brain swelling). Barnes P. Rep. ¶ 11; Deborah Tuerkheimer, Criminal Justice at a Crossroads: Science-Dependent Prosecution and the Problem of Epistemic Contingency, 62 Ala. L. Rev. __, 4-5 (forthcoming 2011) (available at http://ssrn.com/abstract=1579394)

ARGUMENT

Proposition 1: Petitioner has advanced new evidence of her factual innocence.

Petitioner has advanced three categories of evidence not presented in her underlying trial to support her innocence: (1) evidence that A.S.'s death was not caused by intentionally inflicted trauma, but instead was the result of natural or accidental causes; (2) evidence that whatever the ultimate cause of A.S.'s brain injury, it was not inflicted by Ms. Moore on January 13, 2004, but occurred days *if not much before*; and (3) evidence that Ms. Moore's alleged "admissions" to the police during the interrogation were false and were made because of the circumstances and nature of the confinement and interrogation. The evidence submitted, if found credible by the Court, would establish that:

1. A.S.'s fatal injuries were not caused by violent shaking. Ophoven Decl. ¶¶ 6-7; Squier Rep. 6. The level of force that would be required to rupture bridging veins and cause the traumatic injury to the brain hypothesized by the prosecution experts cannot be caused by shaking, at least not without total neck failure. Ophoven Decl. ¶¶ 6-7; Faris Bandak, Shaken Baby Syndrome: A Biomechanics Anlaysis of Injury Mechanisms 151(1) Forensic Science Int'l, 71-79 (2005). Moreover, if the shaking caused injury in the manner described the prosecution's expert (traumatic tearing of the bridging veins), there would have been *significantly more* bleeding in the brain than that found in A.S.'s autopsy. Barnes P. Rep. ¶¶ 18, 23; Mack P. Rep. ¶¶ 10-11 & Ex. 2.
2. A.S.'s fatal injuries could not have been caused by shaking him in the manner

described by Ms. Moore in her police interview, even if A.S.'s head were hitting the floor. Ophoven Decl. ¶ 6.

3. Even if Ms. Moore shook A.S. in the manner she described during her police interrogation, it did not cause injury to A.S. There is no medical evidence whatsoever indicating that A.S. suffered trauma in the approximate half hour before his hospital admission. Ophoven Decl. ¶¶ 4-6; Barnes P. Rep. ¶¶ 21, 26; Mack P. Rep. ¶ 14; Squier Rep. 6. Instead, the only sign of impact injury – the contusion to the underside of the scalp on the back of the head – was at least several days old, and possibly older. Ophoven Decl. ¶¶ 5, 7, 17; Barnes P. Rep. ¶ 25; Mack P. Rep. ¶ 13. This is consistent with the age of the subdural bleeding, and reports that, in the days preceding his hospital admission, A.S. suffered a serious bathtub fall in the care of others, causing dramatic behavioral changes. Squier Rep. 6; B. Moore Decl. ¶ 15; J. Roth Decl. ¶ 11; Jones Decl. ¶ 11; E. Roth Decl. ¶ 3; T. Moore Decl. ¶ 10.

4. Contrary to the medical evidence presented at trial, there are a wide array of natural and/or accidental causes that would explain A.S.'s condition. Ophoven Decl. ¶¶ 7-10, 12-17 & Ex. B at 215-220; Barnes P. Rep. ¶¶ 9, 11-12, 17, 23-26; Mack P. Rep. ¶ 9; Gardner Rep. ¶ 15-16, 18-19; Squier Rep. 6. Neuropathologic studies have found that the type of brain damage suffered by A.S. is hypoxic-ischemic (i.e. due to lack of oxygen) and is not therefore necessarily linked to trauma or to any particular time frame. Barnes P. Rep. ¶ 17; Squier Rep. 5.

5. A.S. had a history of prenatal drug exposure, developmental delays, and abnormal behaviors, and was declining for some time before his death with notable, unexplained symptoms. The records and history are consistent with natural and/or accidental causes, none of which were explored. Ophoven Decl. ¶¶ 15-17; Barnes P. Rep. ¶¶ 23-26; Mack P. Rep. ¶ 21; Gardner Rep. 15-16, 18-19; Squier Rep. 6-9; J. Roth Decl. ¶¶ 3-7; Moore Decl. ¶ 5; Snyder v. Snyder, Mod. App. for Temp. Order (Okla. Co., Okla. Sept. 18, 2003); Sooner Start Records, Referral Family History Notes; OU Med. Ctr. Med. Rec.; Saints Ped. Med. Rec.; Snyder Police Int. Tr. 5.

6. A.S. also suffered from a number of significant falls resulting in head injury, which very likely caused or contributed to his death. After a fall three months before his death, A.S. abruptly stopped growing and developing normally. After the fall in the bathtub approximately a week before his death, A.S. had the classic symptoms of a head injury, including extreme lethargy and positional discomfort, likely resulting from a headache from spontaneous intracranial hypotension, increased intracranial pressure, and/or meningeal irritation. Ophoven Decl. ¶¶ 12, 16; Barnes P. Rep. ¶¶ 21, 25-26; Mack P. Rep. ¶ 16; J. Roth Decl.¶¶ 11–14; Moore Decl.¶ 2; Garner Rep. ¶ 4; Jones Decl. ¶¶ 9, 11; E. Roth Decl. ¶ 3; T. Moore Decl. ¶¶ 8-10; D. Carmichael ¶¶ 3-4; G. Carmichael ¶¶ 4-5; Deaconess Med. Records; Sooner Start Records: 1-18-04 Service Provider Note.

7. Based on A.S.'s history, the reported condition in which he was found after his

collapse, and the autopsy report of a swollen tongue with bite marks, A.S. may have suffered from an undiagnosed and untreated seizure disorder, which can result in lack of oxygen and brain swelling. Ophoven Decl. ¶¶ 13, 16; Barnes P. Rep. ¶¶ 21, 25; Mack P. Rep. ¶ 20; J. Roth Decl. ¶ 5; Jones Decl ¶ 4.

8. Medical evidence of an abnormality in the subarachnoid space (the area just outside the brain) was not explored at the time of A.S.'s autopsy. Had special cultures and neuropathology samples been taken from the affected area and the entire brain, instead of selected sections, the possible fatal role of the highly abnormal finding could have been determined. Ophoven Decl. ¶¶ 14, 16; Barnes P. Rep. ¶ 22; Squier Rep. 5-7 (recent through neuropathological examination identified a recent thrombosed vein that may have contributed to his collapse); Mack P. Rep. ¶¶ 16-19, 21 (discussing possible thrombosis)[8].

9. Based on the objective medical evidence, A.S.'s death is attributable to accidental events and/or natural causes that occurred days, weeks, or months *prior to* hospital admission: likely complications of multiple falls, with repeated blunt force trauma to the head; untreated seizures; a possible infection and/or other medical conditions which in retrospect had greater significance than was recognized by his caretakers or medical care providers. It is *not* attributable to an injury that occurred approximately

[8] Thrombosis is a form of childhood stroke most often associated with illness or dehydration. In this case it is possibly secondary to prior head injury. Mack P. Rep. ¶ 17; Squier Rep. 6-7.

half hour before hospital admission. Ophoven Decl. ¶¶ 15-17; Barnes P. Rep. ¶¶ 21, 25-26; Mack P. Rep. ¶ 19; Gardner Rep. 15-19; Squier Rep. 5-9.

10. Ms. Moore' emotional state at the time of the interrogation, together with the interrogation methods used by the police, caused Ms. Moore to feel hopeless and induced feelings of guilt because of her inability to save a child she loved who collapsed in her care and her refusal to agree with the police was preventing Todd from returning to the hospital to be with his dying child. Those feelings coupled with a strong desire to escape the interrogation led Ms. Moore to essentially agree with what the police suggested. B. Moore Decl. ¶¶ 8-11; J. Roth Supp. Decl. ¶¶ 4-8, 11; E. Roth Decl. ¶ 6; Handler Decl.; Roberson Rep.; Kassin, et al., Police-Induced Confessions: Risk Factors and Recommendations, 34 Law Hum Behav 3, 14-15, 22-23 (2010); see also Deborah Tuerkheimer, Criminal Justice at a Crossroads, 62 Ala. L. Rev. at 46-51; Richard Ofshe & Richard Leo, The Decision to Confess Falsely: Rational Choice and Irrational Action, 74 Den. U. L. Rev. 979, 997-998 (1997).

Proposition 2: When the new evidence and all reasonable inferences therefrom are weighed along with the evidence presented at trial, no reasonable juror would have found Petitioner guilty beyond a reasonable doubt.

In Ms. Moore's criminal trial, the jury was presented no evidence and therefore had no reason to doubt that A.S. died from having been shaken (with or without impact) and that his collapse was immediate or nearly immediate after being shaken. These conclusions were presented as absolute medical facts. However, the new evidence presented by Ms. Moore

refutes both of these premises – that A.S.'s injuries were the result of intentional trauma (and therefore that any abuse occurred at all), and that A.S. would have immediately collapsed following a head injury. Had this evidence been presented to the jury, it more likely than not would have changed the outcome.

Shaken Baby Syndrome (SBS) is a theory that gained significant momentum in the legal arena in the 1990s. The syndrome itself is "in essence, a medical diagnosis of murder, one based solely on the presence of the diagnostic triad: retinal bleeding, bleeding in the protective layer of the brain, and brain swelling." Deborah Tuerkheimer, The New Innocence Project: Shaken Baby Syndrome and the Criminal Courts, 87 Wash. U.L. Rev. 1,16 (2009). When a child has these symptoms and there is no medical explanation satisfactory to the medical provider for the symptoms, the last caregiver with the child was assumed to have caused the injuries through shaking the child, with or without impacting the head on a solid surface. Id. at 3.

However, history has demonstrated that "generally accepted scientific theory is not always correct." State v. Bible, 858 P.2d 1152, 1181 (1993). As science has advanced, it has come to question several previously held assumptions about SBS.[9] Tuerkheimer, The New

[9] The legal implications of the shifting SBS paradigm have been significant. Tuerkheimer, Criminal Justice at a Crossroads, supra; Molly Gena, Shaken Baby Syndrome: Medical Uncertainty Casts Doubts on Convictions, 2007 Wis. L. Rev. 1 (2007). Courts are responding, including by overturning convictions based on new science that challenges the old assumptions, see, e.g., Wisconsin v. Edmunds, 746 N.W. 2d 590 (Wisc. Ct. of App. 2008) (holding that shift in mainstream medical opinion regarding SBS established reasonable probability that a different result would be reached in new trial); Ex parte Henderson, 246 S.W.3d 690 (Tex. Crim. App. 2007) (granting a successive habeas petition because of the new

Innocence Project, supra at 1. Although some have clung to the original theories of SBS, most have shifted to a more equivocal position, especially regarding the diagnostic value of various symptoms typically associated with SBS, and the timing of injury in relation to the child's collapse. Id. at 16-22.

Science has now identified a wide array of natural and accidental explanations for the symptoms presented by a child like A.S. Ophoven Decl. ¶ 17 & Ex. B; Barnes P. Rep. ¶¶ 11-13, 17, 19, 21-26 & Ex. 2; Mack P. Rep. ¶ 9; Gardner Rep.¶ 15-16, 18-19; Squier Rep. 6, 9; Barnes & Krasnokutsky, Imaging of the Central Nervous System in Suspected or Alleged Nonaccidental Injury, Including the Mimics, 18 Top Magn Reson Imaging 53, 65-70 (Feb. 2007) (discussing the various conditions and circumstances that "mimic" SBS). Contrary to the claims of the medical experts at trial, the presence of these symptoms – collectively or individually – is not necessarily indicative of intentional trauma. In this case, the symptoms are linked to natural or accidental causes that *predate* January 13, 2004.

The prosecution claimed in Ms. Moore's trial that A.S.'s retinal hemorrhaging could

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scientific evidence that an accidental fall could have caused the baby's injuries). Other jurisdictions have formed committees to review SBS convictions based on these new scientific developments. For example, the government of Ontario, Canada, recommended that all SBS convictions between 1981-2001 be reviewed due to concern "that criminal convictions based on pediatric forensic pathology of former times may be unsustainable in light of the current state of the science." Justice Stephen T. Gouge, Commission, The Inquiry into Pediatric Forensic Pathology in Ontario 517, 517-18 (2008) (report available at www.goudgeinquiry.ca). This change has caught the attention of the popular media. Emily Balezon, Shaken- Baby Syndrome Faces New Questions in Court, N.Y. Times (Feb. 6, 2011) , available at http://www.nytimes.com/2011/02/06/magazine/06baby-t.html?_r=2.

only have been caused by shaking and that the ocular findings were "key" because they unquestionably established that A.S. was shaken. Trial Tr. Vol. II 155, 260-61, 267; Trial Tr. Vol. III 88-89,111; Trial Tr. Vol. IV a69-70. Science has since confirmed that retinal hemorrhaging can also occur in accidental trauma and a wide variety of other circumstances. See, e.g., Gardner Rep.¶¶ 15-16, 18-19; Ophoven Decl. ¶ 7; Barnes P. Rep. ¶ 24; Leestma, supra at 362-64; John Plunkett, Fatal Pediatric Head Injuries Caused by Short Distance Falls, 22 Am. J. Forensic Med. & Path.1, 8-9 (2001) (four of the six children who died from a witnessed fall and had a funduscopic examination of the retinas showed bilateral retinal hemorrhage); Tuerkheimer, The Next Innocence Project, supra 7(and sources cited therein). Indeed, even the American Academy of Ophthalmology recognizes that retinal hemorrhaging may occur with a coagulation disorder, and with papilledema,[10] neither of which are associated with SBS. Gardner Rep. ¶ 18; Am. Academy of Ophthalmology, Information Statement: Abusive Head Trauma/Shaken Baby Syndrome (June 2010). A.S. had a coagulation disorder *and* papilledema. Gardner Rep. ¶¶ 15, 17-18; Ophoven Decl. ¶ 7; Barnes P. Rep. ¶ 24. A.S. also suffered from choroidal detachments in both eyes (not a retinal detachment in one eye as originally thought by Dr. Korber), which again are not associated with SBS. Gardner Rep. ¶¶ 14-15, 18. The presence of retinal hemorrhaging in this case therefore is a"key" to SBS; Instead, it is *inconsistent* with SBS and consistent with natural and/or accidental causes.

[10] Papilledema is optic disc swelling secondary to increased intracranial pressure. Gardner Rep. ¶ 11.

Similarly, the prosecution's witnesses testified that when the child's head was shaken back and forth violently, it threw his brain back up against his skull in both the front and back of his skull. Trial Tr. Vol. II 170. This action supposedly caused the tearing in the bridging veins and bleeding - creating the subdural hematoma. Id.; Trial Tr. Vol. III 82-84. Even if this theory is true, it is important to note that there were no torn bridging veins noted at autopsy. Ophoven Decl. ¶ 6; see also Trial Tr. Vol. III 97, 102-103. A recent review by Dr. Mack and Dr. Squier concluded that the size and configuration of the subdural hemorrhages attributed to SBS are *inconsistent with* bridging vein rupture, which would produce larger bleeds. Barnes P. Rep. ¶ 18; Mack P. Rep. ¶ 10-11 & Ex. 2. The very small amount of blood in A.S.'s brain - about 2 teaspoons – is therefore inconsistent with the bleeding that would have resulted from a ruptured bridging vein. Mack P. Rep. ¶¶ 10-11. Indeed, the experts agree that the bleeding in this instance is most likely a result of A.S.'s coagulopathy and is consistent with the child's earlier injury to the back of his head. Ophoven Decl. ¶ 6 n.2; Barnes P. Rep. ¶¶ 9, 23; Mack P. Rep.¶ 11; Squier Rep. 6. In short, the claim by the experts at the trial that the subdural hematoma could only be caused by shaking, see, e.g., Trial Tr. Vol. III 83, is completely false.

Science also has disproven the State's expert's claims that a child would immediately become symptomatic after receiving an abusive head injury. See, e.g., Plunkett, supra at 8-9 (12 of 18 children who died after short falls on playground equipment had lucid intervals); Ophoven Decl. Ex. B at 215-216; Mack P. Rep. ¶ 12; Squier Rep. 7-9. Even the American

Academy of Pediatrics recognizes that "abused infants may not demonstrate neurologic signs and symptoms despite significant nervous system injury." Am. Academy of Pediatrics: Section on Radiology, Diagnostic Imaging of Child Abuse, 123 Pediatrics, 1345, 1347. The testimony that A.S. would have collapsed "immediately" after sustaining a head injury is, again, simply incorrect. In fact, as detailed below, the medical evidence in this case confirms that there was a *significant* time lapse between the head injury and the collapse.

Clinging to the medical dogma of the past, none of the so-called "experts" in Ms. Moore's case created a differential diagnosis – a list of all potential causes supported by the information gathered that could explain A.S.'s symptoms. Ophoven Decl. ¶ 8. The importance of a differential diagnosis in cases of suspected child abuse cannot be overstated because of the implications for both the child and his family. See Tuerkheimer, The Next Innocence Project, supra at 7,9 & n. 108, 134-136; see also Barnes P. Rep. ¶ 19; Angelo P Giardino & Eileen R Giardino, Child Abuse and Neglect, Physical Abuse. In this case, no other explanations were explored – abuse was suspected from the moment the child was transported and the medical providers set out to confirm it.

Perhaps because of the nearly-immediate conclusions of abuse drawn by the medical providers, those charged with determining causation for his death overlooked and/or disregarded key medical evidence. See. e.g., Moore Decl. ¶ 4; Ophoven Decl. ¶¶ 8-15; Barnes P. Rep. ¶¶ 10, 19-22; Mack P. Rep. ¶¶ 16-18; Gardner Rep.¶¶ 9,11, 15-19; E. Roth Decl ¶ 7; J. Roth Supp. Decl. ¶ 13. By ignoring this evidence, the prosecution was able to

present A.S. as a "normal" happy child the morning of his collapse. Trial Tr. Vol.1 36.

A review of all of the available medical and clinical information conducted by Dr. Janice Ophoven – a pediatric forensic pathologist board-certified in anatomic pathology and forensic pathology with nearly 40 years of experience – along with reviews by Drs. Waney Squier, a consultant neuropathologist at Oxford Radcliffe Hospital,[11] Horace Gardner, a board-certified ophthalmologist who has studied, lectured, and written on the relationship between retinal hemorrhaging and SBS,[12] Professor Patrick Barnes, Chief of Pediatric Neuroradiology at Stanford's Children's Hospital,[13] and Professor Julie Mack, a leading researcher on the anatomy and physiology of the infant brain and dura,[14] *all* support the conclusion that A.S.'s death was most likely the result of accidental and/or natural causes, with each finding no evidence of abuse or trauma occurring shortly before hospital admission.

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[11] In addition to being a consultant neuropathologist at Oxford Radcliffe Hospital, Dr. Squier is a honorary clinical lecturer at the University of Oxford. She has written extensively on infant brain pathology, including in the area of sudden unexpected death. Squier Rep. 2.

[12] Dr. Gardner is board-certified in both Ophthalmology and Nuclear Medicine. He has testified as an expert on the subject of retinal hemorrhaging in SBS cases numerous times. Gardener Rep. ¶ 1 & Ex. 1.

[13] Dr. Barnes is board certified in Diagnostic Radiology and Neuroradiology, and is the Chief of Pediatric Neuroradiology and Medical Director of the MRI/CT Center at Lucile Salter Packard Children's Hospital. He also is a Professor of Radiology at Stanford University Medical Center. Barnes P. Rep. ¶ 1 & Ex. 1. Dr. Barnes was a key prosecution witness in the seminal 1997 shaken baby case of Louise Woodward – further evidence of the evolution of scientific discovery and thinking.

[14] Dr. Mack is a board certified radiologist, and has a certificate of added qualifications in pediatric radiology. She is a graduate of Harvard Medical School with particular expertise in linking radiology images to the anatomy and physiology of the dura and bridging veins in children, an area in which she has published seminal articles. Mack P. Rep. ¶¶ 1, 25 & Ex. 1-3.

The most probable causes include the complications from multiple falls, along with an undiagnosed or untreated seizure disorder. Ophoven Decl. ¶¶ 15-16; Barnes P. Rep. ¶¶ 21, 25-26; Mack P. Rep. ¶ 15-24.

Supporting her conclusion on causation, Dr. Ophoven points first to A.S.'s prior history of falls. Id. at ¶ 12. She found two falls of great significance, the first of which occurred in October 2003, when the child fell down a concrete porch, striking his forehead against a concrete step. J. Roth Decl. ¶ 9; Deaconess Med. Records. Bruising and swelling was still evident months later, J. Roth Decl. at ¶ 10; J. Roth Supp. Decl ¶ 3 & Exh. 3; Jones Decl. ¶ 9; T. Moore Decl. ¶ 9; D. Carmichael Decl. ¶¶3-4 & Ex. 1. Indeed, the autopsy itself – conducted three months after the fall – revealed small contusions in the injured area. Ophoven Decl. ¶ 12; Autopsy Report. After this significant fall, A.S. stopped growing or otherwise developing normally. Ophoven Decl. ¶ 12; J. Roth Decl. ¶ 10; Jones Decl ¶ 9. The second fall occurred approximately a week before A.S.'s death, when he fell on his head while his mother bathed him standing up in a cast iron tub. Ophoven Decl. ¶ 12; J. Roth Decl.¶¶ 11-14; B. Moore Decl. ¶¶ 1-2; Jones Decl ¶ 11. Complications from these and other falls fully explain the medical findings and are consistent with "Second Impact" syndrome. Ophoven Decl. ¶12 & n.3; Barnes P. Rep. ¶ 23; Mack P. Rep. ¶ 23; Gardner Rep. ¶ 19; Squier Rep. 7.

Additionally, A.S.'s child care providers reported that A.S. suffered from seizure-like symptoms, including trembling from the feet up and staring spells. J. Roth Decl. ¶ 5; Jones

Decl ¶ 4. These statements, coupled with the report that A.S. was found with his tongue clenched between his teeth and the autopsy findings of tongue injuries, suggests that A.S. suffered from an undiagnosed seizure disorder. Ophoven Decl. at ¶ 13; see also Barnes P. Rep. ¶ 20; Mack P. Rep. ¶ 20. An untreated seizure disorder can disrupt a child's oxygen supply and cause brain swelling – the ultimate cause of A.S.'s death. Ophoven Decl. ¶ 13; Barnes P. Rep. ¶¶ 21, 25-26; Mack P. Rep. ¶ 20.

Dr. Ophoven also observed what appeared to be pus around the arachnoid, noted by Dr. Choi in the autopsy report as focal leukostasis. Ophoven Decl. ¶ 14. The presence of leukostasis is highly abnormal and should have been investigated as a cause or contributor to the child's death. Id. ¶¶ 14, 16; Barnes P. Rep. ¶ 21-22, 25-26. Neuropathologist Dr. Squier conducted an in-depth analysis of this area of the brain and concluded that A.S. had a recently thrombosed vein. Although the timing of the thrombosis could not be determined, Squier Rep. 4-5, it was noted on the CT scan taken approximately 40 minutes after A.S.'s collapse, and therefore may have played a role in A.S.'s collapse. Mack P. Rep. ¶¶ 6, 17-18; Barnes P. Rep. ¶ 8.

In short, the head injuries sustained in prior falls, seizure disorder, as well as other medical disorders,[15] are all consistent with A.S.'s symptoms and would explain his death. Ophoven Decl. ¶¶ 16-17; Barnes P. Rep. ¶¶ 21-22, 25-26; Mack P. Rep. ¶¶ 15-19; Squier Rep.

[15] Dr. Mack raises the possibility of spontaneous intracranial hypotension and venous thrombosis (abnormal clotting) as two conditions that should be considered as part of the differential diagnosis. Mack P. Rep. ¶¶ 16-17, 21. During her review, Dr. Squier determines that the brain findings are consistent with venous sinus thrombosis. Squier Rep. 4-5.

5-8. Shaking does not. As set forth in Dr. Ophoven's declaration, it is biomechanically improbable, if not impossible, to shake this twenty-four pound child with sufficient force to cause the medical findings in this case. Ophoven Dec. ¶ 6; see also Squier Rep. 5 (noting that A.S. is much older and therefore larger than usually seen in SBS cases). Moreover, if the child was shaken so violently as to cause the fatal injuries, he would have had neck hemorrhages or other injuries such as bruising to the chest or shoulders where he was gripped during the shaking. Ophoven Decl. ¶ 6; Werner Goldsmith & John Plunkett, A Biomechanical Analysis of the Causes of Traumatic Brain Injury in Infants & Children, 25 Am. J. Forensic Med. & Pathology 2, 94 (June 2004) (even assuming that an individual could "shake" a child with sufficient force to cause fatal injury, there would be significant structural neck damage). None of this evidence was found at autopsy. Ophoven Decl. ¶ 6; see also Trial Tr. Vol. III 97, 102-103.

The Respondent is expected to claim that shaking plus impact caused A.S.'s death because this conclusion is consistent with admissions made by Ms. Moore during the police interrogation.[16] With regard to these admissions, Ms. Moore contends that they were wrongfully admitted or unreliable as coerced. As noted above, she never unequivocally waived her rights under Miranda v. Arizona, 384 U.S. 436 (1966). Moore Interr. Tr. 5-6

[16] Although the State repeatedly refers to Ms. Moore's statements as a "confession", she never confessed to having shaken A.S. with sufficient force to have caused his fatal injuries – a fact confirmed by the prosecution's own witness at trial. Trial Tr. Vol. II 191-92, 226-27. Similarly, she never confessed to having used unreasonable force on A.S., which could have resulted in his death. Handler Decl. ¶ 4. These statements are therefore more accurately characterized as "admissions", "false admissions", or "inculpatory statements".

(answering "I guess" to question as to whether she understood her rights and responding with a question as to whether, in light of those rights, she wished to talk). Moreover, during the interrogation, Detective Dupy implies that Ms. Moore won't go to jail if she tells the officers "the truth" about what happened. Id. at 28. From the context of the prior discussion, it is clear that the police believe that the "truth" is that she shook A.S. See, e.g., id. at 18-27. Promises of leniency can render a confession involuntary or coerced. Bram v. U.S., 168 U.S. 532, 542-43 (1897) ("a confession . . must [not] be . . . obtained by any direct or implied promises, however slight"); U.S. v Lopez, 437 F.3d 1059 (10th Cir. 2006) (engaging in a detailed analysis in a comparable case and finding that the promise of leniency coupled with misrepresentations as to the strength of the evidence impaired defendant's capacity for self-determination and rendered confession inadmissible). Therefore, although the statements are subject to consideration by the Court in a Schlup analysis, the Court should give them little or no weight due to their inherent unreliability and/or improper admission. Schlup, 513 U.S. at 327-28 (court can consider evidence purported to be improperly admitted at trial but should weigh it accordingly).

Even if the statements were legally admissible, they should be given little or no weight because they are inconsistent with the medical findings. As noted above, the medical findings are inconsistent with shaking having caused A.S.'s fatal injuries. As for shaking plus impact, it is scientifically improbable, if not impossible, that the injuries A.S. sustained were caused by Ms. Moore shaking the child as he lay prone on the floor – even if his head did also hit the

head during the shaking. Ophoven Decl. ¶ 6. There is no significant evidence of any recent head trauma consistent with the child's head hitting the floor. Ophoven Decl. ¶ 6. There was no skull fracture or soft tissue swelling (bumps) typically associated with head impacts, id., and no evidence at all of primary (versus secondary) brain trauma. Squier Rep. 5, 8.

The only evidence relied on to prove that A.S. had his head "slammed against the floor", Trial Tr. Vol. III at 81-86, – contusions between A.S.'s skull and scalp – was days if not weeks old! Dr. Choi noted that her microscopic examination revealed scattered hemosiderin. Autopsy Report, Microscopic Exam. 1. This alone suggests that the injury is not fresh. See Leestma, supra at 509 (noting that "[m]acrophages containing hemosiderin appear in small numbers as early as 5 days post injury but are generally not very obvious until 7 days or later."); Mack P. Rep. ¶ 13. When Dr. Ophoven tested these sections using a special stain to detect the presence of iron, she found *enormous* amounts of hemosiderin (iron positive cells), as well as maturing scar tissue and *new blood* vessel formation – all indicating substantial healing. Ophoven Decl. ¶¶ 5, 12. The contusions used to "corroborate" Ms. Moore's inculpatory admissions were the result of an injury sustained days or even weeks before A.S.'s death. Id. Also importantly, the age of these contusions is also consistent with the age of the subdural hemorrhaging and the ocular findings. Squier Rep. 5; Gardner Rep. ¶ 17;Trial Tr. Vol. II 265-66, 272-273; see also Ophoven Decl. ¶ 5; Leestma, supra at 365 (indicating that it takes a week or more to develop papilledema). The only evidence of trauma – the contusions – were not caused on January 13, 2004 by Ms. Moore hitting A.S.'s head

against the floor while shaking him. Id. Instead, all of the injuries occurred many days earlier, consistent with the timing of the bathtub fall approximately a week prior.

The histological confirmation that A.S.'s head injury occurred many days before his collapse is also supported by the clinical findings. By the time A.S. arrived at the hospital, his brain had swollen so significantly that he was in the most final/end stages of life. Ophoven Decl. ¶ 5. Such an advanced degree of swelling is clinically inconsistent with an injury that occurred less than an hour before the CT scan, as brain swelling following serious brain damage generally peaks 48 to 72 hours after injury. Id. at ¶¶ 5,8; see also Mack Pr. Rep. ¶ 12 (extensive early edema generally does not appear for 6-24 hours; earlier appearance is unlikely absent clear signs of trauma, such as skull fracture, large subdural hematoma or crush injuries, which were not present here). In addition, A.S.'s auto-regulation system, which detects and adjusts to changes in blood pressure, had completely failed by the time of admission, which does not occur within 45 minutes of an injury. Ophoven Decl. ¶ 5. Thus, the presence of hemosiderin in the contusions under A.S.'s scalp and in the subdural hemorrhages provides conclusive proof that the head injuries were old. This timing is further confirmed by the ocular findings, the progression of brain swelling, and the clinical history of symptoms dating back days, weeks, or months before his death. Given these findings, it is physiologically impossible for whatever caused A.S.'s brain injury to have occurred in the less than 15 minutes that Ms. Moore was alone with him. Ophoven Decl., at ¶¶ 5, 11-12; Barnes P. Rep. ¶¶ 25-26; Mack P. Rep. ¶ 14; Squier Rep. 5-6, 9; Gardner Rep.¶ 17.

What, then, is the significance of Ms. Moore interrogation admissions? Since the time of Petitioner's trial, the phenomena of "false confessions" has been subject to additional scientific testing. It has garnered public attention through the notable cases of the Central Park jogger, where five teenagers confessed and were later exonerated, and the Norfolk Four, where navy veterans confessed to a brutal rape and murder that DNA evidence proved they did not commit.[17] See PBS: Frontline, The Confessions (Nov. 9, 2010); Kassin, supra at 3, 14-15. Indeed, research suggests that in approximately 15-20% of all cases in which DNA has exonerated someone previously convicted of the crime, the individual had given a false confession. Kassin, supra at 3-4. An analysis of the factors linked to false confessions is therefore highly relevant to determining the significance, if any, of Ms. Moore's admissions.

Three key sets of factors that have been linked with false confessions – suspect-specific factors; interrogation-specific factors; and interactive factors between the suspect and the interrogation. Roberson Rep. 2, 14-17; Kassin, supra at 16-23 (using slightly different labels to address the same sets of factors). A review of some or all of these factors was conducted by forensic psychologist Dr. Shawn Roberson (who analyzed the presence of all three sets of factors),[18] and law enforcement interrogation trainer, Mark Handler (who limited his analysis

[17] As a local testament to the growing recognition that false confessions may result in wrongful convictions, the Oklahoma Bar Association has formed the Oklahoma Justice Commission to be headed by former Oklahoma Attorney General Drew Edmondson. See Okla. Bar Assoc., Press Release: Edmondson to Chair Justice Commission (Jan. 28, 2011) (available at http://www.okbar.org/news/front/2011/01/28-edmundson-head-justice-commission.htm).

[18] Dr. Roberson in a licensed psychologist who has consulted, testified, lectured, and written on issues of police interrogation techniques and false confessions. Roberson C.V.

to interrogation-specific factors).[19] This case presents factors from all three categories, but primarily the second two. These factors are important in addressing the likelihood of false admissions or false confessions. See Crane v. Kentucky, 476 U.S. 683 (1986) (discussing the relevance of psychological conditions of interrogation).

At the time of her interview, Ms. Moore was fearful and emotionally drained. B. Moore Decl. ¶ 8; Roberson Rep. 14. The interview occurred late in the evening after Ms. Moore had learned that A.S. was likely brain dead. Moore Decl. ¶ 8. Recent trauma, fatigue, and fear are positively linked to a higher incidence of false confessions. Roberson Rep. 14.

Certain interrogative techniques used by the police are also tied to a higher incidence of false versus true confessions. For instance, the detectives interrogating Ms. Moore made her an implicit offer of immunity if she confessed to having shaken A.S. They also attempted to sympathize with Ms. Moore and offer her face-saving excuses - a technique called minimization. Both of these techniques – offers of leniency and minimization – are positively tied to a higher incidence of false confessions. Handler Decl. ¶¶ 6-8 & Ex. 2. Additionally, the detectives in this case used a variation of the "false evidence" ploy.[20] Id. at ¶ 10.

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[19] Mark Handler is a former law enforcement officer who trains law enforcement to avoid interrogative techniques that are linked to a higher incidence of false confessions. Handler Decl. ¶¶ 6-8 & Ex. 1.

[20] At the time of the interrogation, the police likely believed their statements on the conclusive nature of the medical evidence. Because the single strongest empirically-supported incentive to confess is the suspect's perception of the strength of the evidence against her, the end result of the detectives making the statements is the same. Handler Decl. ¶ 9. Indeed, the detective's belief in their claims likely increased the likelihood of a false confession or admission.

Detective Dupy told Beverly that "99% of the time . . retinal hemorrhaging in both eyes . . . is caused by shaken baby syndrome." This theme of how strongly and conclusively the medical evidence establishes that Ms. Moore shook A.S. is repeated throughout the interrogation. Moore Interr. Tr. 19, 21-25. A suspect's perception of proof against her is the strongest incentive for a suspect to confess, whether truthfully or falsely. Handler Decl. ¶ 9. The introduction of false evidence will further increase the number of false versus true confessions. Id.

The tactics used by the police in Ms. Moore's interrogation induced Ms. Moore to feel guilty as well as grief stricken and hopeless. For example, after repeatedly indicating how much she loved Todd and A.S., Ms. Moore was told that she should "show them" by admitting to the crime and that doing so would be in Todd and Avery's best benefit. Moore Interr. Tr. 26-27. Ms. Moore also learned that Todd was "waiting next door" for her to admit to the "truth". Id. at 28. Because Ms. Moore had previously made arrangements for him to be questioned first so that he could go back to the hospital and be with his dying son, she felt guilty that her insistence that she had not harmed the child was preventing two people she loved from being together during A.S.'s final hours. B. Moore Decl. ¶¶ 8-11. Ms. Moore also felt hopeless about her situation and highly anxious – with a strong desire to escape the interrogation. Id.; Roberson Rep. ¶¶ 14-16. Ms. Moore felt that admitting to having shaken A.S was the only way to escape the interrogation. B. Moore Decl. ¶ 11. So she did, repeating back the information she thought the detectives wanted to hear, but never giving a post-

admission narrative or being allowed to give an open-ended explanation for what had occurred. Handler Decl. ¶10; Roberson Rep.¶¶ 15-16. Once Ms. Moore was relieved from the intensity of the interrogation, she retracted the false statements and has maintained her innocence since. B. Moore Decl. ¶14.

In light of the circumstances of Ms. Moore's confinement and interrogation and the increased awareness of the existence and prevalence of false confessions, the inculpatory statements given by Ms. Moore during interrogation would not preclude a reasonable jury from finding her not guilty. See Wisconsin v. Louis, Case No. 2009AP2402-CR (affirming post-conviction relief in SBS case noting that "the jury may view Louis's confession in a different lift with the aid of the new medical testimony.") (March 15, 2011 Wisc. Ct. App. Dist. III), Ex. 1. In fact, Ms. Moore's statements bear the hallmark of a false admission or confession because they don't match the objective evidence.

Regardless of the weight given the inculpatory statements, the significance of the medical testimony presented at trial – and the fact that it went unquestioned – cannot be overstated. It was the *only* evidence presented by the prosecution that actually linked Ms. Moore to a *crime*.[21] The prosecution referenced A.S.'s body "telling the story" as to what happened, and the story told by his body (through the unrefuted medical experts) was one of

[21] Although Respondent will likely argue that the prosecution also relied on Ms. Moore's statements, it is undisputed that Ms. Moore never confessed to having used unreasonable force sufficient to have caused A.S.'s death. At best, Ms. Moore admitted to having shaken A.S. – in a manner that the prosecution's expert agreed would not have caused A.S.'s injuries. Trial Tr. Vol. II 191-92, 226-27. Therefore, without the medical "evidence" to support the allegation that the force used on A.S. was unreasonable, Ms. Moore could not have been convicted.

being violently and fatally shaken. See, e.g., Trial Tr. Vol. IV 75. It is no wonder that the jury convicted Ms. Moore. See Melendez-Diaz v. Mass., __ U.S. ___, 129 S. Ct. 2527, 2536 (2009) (recognizing that invalid or discredited forensics results in wrongful convictions); see also Tuerkheimer, The Next Innocence Project, supra at 13.

In fact, however, A.S.'s body told a different story – a story of a serious head injury that was at least several days old, consistent with the bathtub fall and the child's symptoms. Faced with this objective medical evidence, a reasonable jury would conclude that (1) A.S.'s fatal injuries could not have been caused by shaking alone, (2) the injuries could not have been caused by shaking A.S. while he lay prone on the floor even if his head may have hit the floor, (3) if Ms. Moore shook the child in the manner described in her interrogation, she did not use unreasonable force because there is no evidence of recent trauma, (4) the injury to A.S. that resulted in his death occurred days if not longer before January 13, 2004, while A.S. was in the care of others, (5) A.S.'s injuries were the result of natural or accidental causes and not the result of any intentionally inflicted trauma, and (6) any admissions by Ms. Moore as to having injured A.S. are refuted by the medical evidence but were the product of the circumstances of her confinement and interrogation. In short, the jury would conclude that Ms. Moore did not, on January 13, 2004, shake (with or without impact) A.S. with such force as to cause his death.

If the jury concluded the above, they would presumably follow the court's instructions and find Ms. Moore not guilty. They would find, as juries have done in many similar and

recent cases, that the child's injuries were not caused by SBS, but by some other medical explanation. See Jameson Cook, Macomb Daily: Aunt Found Not Guilty of First Degree Child Abuse After Spending Four Years in Prison (Oct. 15, 2010) (quoting the jury foreperson as saying "There was absolute reasonable doubt. [The injury] could have been caused by abuse or it could have been caused by a natural disease process"; Graeme Moore, Carolina Live: Father in Shaken Baby Case Found Not Guilty, (Nov. 19, 2009) (father presented evidence that child died from underlying medical condition and not SBS); see also Dena Richardson, KFOXTV.com: UPDATE: Monea Tyson Found Not Guilty of Capital Murder (Nov. 18, 2010) (mother acquitted in SBS/blunt force trauma case after presenting medical testimony that the child died from an infection, not child abuse); Ty Tagami, Atlanta Journal-Constitution: DeKalb Woman Acquitted in Shaken Baby Death (Oct. 7, 2009) (day care provider acquitted of death in second trial where evidence that the child had sickle cell anemia was not presented in first trial).

Ms. Moore has presented sufficient evidence of her actual innocence. Just as the Court found in House, the scientific developments and medical retesting, coupled with a history inconsistent with the theory presented at trial, makes it more likely than not that no reasonable juror would have convicted her. House, 547 U.S. at 538-39 (holding that the petitioner satisfied the actual innocence standard by presenting evidence challenging the forensic proof offered in the trial which connected the defendant to the crime). The evidence presented does more than just cast doubt as to Ms. Moore's guilt. Rather, the evidence as to the nature and

probable causes for A.S.'s injuries and, even more importantly, the *timing* of the injuries, conclusively establishes that Ms. Moore did not, "on or about the 13th day of January, 2004, . . . willfully or maliciously injure[] . . . or use[] unreasonable force" on A.S., thereby causing his death. In other words, the jury would find that Ms. Moore is actually innocent of murder. Ms. Moore is entitled to equitable tolling and to present her constitutional claim.

RELIEF REQUESTED

Because Ms. Moore has presented new reliable evidence of her actual innocence, she is entitled to pass through the "actual innocence gateway" and proceed to the merits of her underlying constitutional claim.

CERTIFICATE OF SERVICE

I hereby certify that on this 8th day of April, 2011, I electronically transmitted the attached document to the Court Clerk of Court using the ECF System for filing. Based on the records currently on file, the Clerk of Court will transmit a Notice of Electronic Filing to the following ECF registrants:

Jared Looper
Donald Self
Diane Slayton
COUNSEL FOR DEFENDANT

s/Christine Cave
Christine Cave

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF OKLAHOMA

BEVERLY MICHELLE MOORE	)	
	)	
Petitioner,	)	
	)	
v.	)	Case No. CIV-09-985-C
	)	
WARDEN MILLICENT NEWTON-EMBRY,	)	
	)	
Respondent.	)	

APPENDIX OF EXHIBITS SUBMITTED BY PETITIONER
(FILED SEPARATELY IN TWO VOLUMES - DKT NOS. 108 & 109)

Exh. No.	Name of Exhibit
VOL. 1:	
1	911 Transcript
2	American Academy of Ophthalmology, Information Statement: Abusive Head Trauma/Shaken Baby Syndrome
3	American Academy of Pediatrics: Section on Radiology, Diagnostic Imaging of Child Abuse
4	Angelo P. Giardino & Eileen R. Giardino, Child Abuse and Neglect, Physical Abuse
5	Autopsy Report
6	B. Moore Declaration
7	Barnes Preliminary Report
8	Barnes & Krasnokutsky, Imaging of the Central Nervous System in Suspected or Alleged Nonaccidental Injury, Including Mimics
9	Criminal Information, Case No. CF-2004-0351 (Oklahoma County, Okla.)

10	D. Carmichael Declaration
11	Deaconess Medical Records of A.S.
12	Dena Richardson, KFOXTV.com: Update: Monea Tyson Found Not Guilty of Capital Murder
13	E. Roth Declaration
14	EMSA Report
15	Faris Bandak, Shaken Baby Syndrome: A Biomechanics Anlaysis of Injury Mechanisms 151(1) Forensic Science Int'l, 71-79 (2005)
16	G. Carmichael Declaration
17	Gardner Report
18	Graeme Moore, Carolina Live: Father in Shaken Baby Case Found Not Guilty
19	Handler Declaration
20	IBMC Medical Records of A.S. (Excerpts)
21	J. Roth Declaration
22	J. Roth Supplemental Declaration
23	Jameson Cook, Macomb Daily: Aunt Found Not Guilty of First Degree Child Abuse After Spending Four Years in Prison
24	Jan Leestma, Forensic Neuropathology 2d ed.
25	John Plunkett, Fatal Pediatric Head Injuries Caused by Short-Distance Falls
VOL. 2:	
26	Jones Declaration
27	Kassin et al., Police-Induced Confessions: Risk Factors and Recommendations
28	Mack Preliminary Report
29	Moore Interrogation Transcript

30	Ophoven Declaration
31	OU Medical Center Medical Records of A.S. (Excerpts)
32	Preliminary Hearing Transcript
33	Roberson Curriculum Vitae
34	Roberson Report
35	Saints Pediatrics Medical Records of A.S. (Excerpts)
36	Snyder Police Interview Transcript
37	Snyder Police Interview DVD
38	Snyder v. Snyder, Modified Application for Temporary Order (Okla. Co., Okla. Sep. 18, 2003)
39	Sooner Start Records (Excerpts)
40	Squier Declaration
41	T. Moore Declaration
42	Trial Transcript Volume I (Excerpts)
43	Trial Transcript Volume II (Excerpts)
44	Trial Transcript Volume III (Excerpts)
45	Trial Transcript Volume IV (Excerpts)
46	Ty Tagami, Atlanta Journal-Constitution: DeKalb Woman Acquitted in Shaken Baby Death
47	Werner Goldsmith & John Plunkett, A Biomechanical Analysis of the Causes of Traumatic Injury in Infants and Children